

Amendments to the Specification:

Please replace the paragraph in the application on [page 9, lines 1-9] with the following amended paragraph:

[page 9, lines 1-9] The energetic plasticizer is selected from those compounds, which are liquids and contain energetic moieties or groups in their chemical structures. These moieties can include nitro or nitrate ester groups, azido groups, nitramino groups. Examples include butanetriol trinitrate (BTTN), trimethylolethane trinitrate (TMETN), triethylene glycol dinitrate (TEGDN), nitroglycerine (NG) glycidyl azide polymer terminated with azide or (GAP azide or GAP Plasticizer), *bis*-(2,2-dinitropropyl) acetal/formal (BDNPF/A), and ~~n-butyl-N-(2-nitroxyethyl)nitramine~~ n-butyl-2-nitrateethyl-nitramine (bu-NENA). In other embodiments of the present invention, the ~~plasticizer~~ plasticizer is BTTN, TMETN and bu-NENA or, more preferably, a combination thereof.

Please replace the paragraph in the application on [pages 9-10, lines 10-25 and 1-4] with the following amended paragraph:

[pages 9-10, lines 10-25 and 1-4] The binder is selected from those oligomers and polymers known as "energetic binders." Energetic binders may be energetic compounds themselves, such as azides, nitrate esters or nitrocompounds, which have been polymerized into oligomers with prosthetic groups on the ends of the polymers for crosslinking or curing. Also, Energetic may be oligomers or polymers of organic esters, ethers, lactones which have the property of absorbing large amounts of energetic plasticizers (typically at least three times their weight) without exudation or degradation of mechanical properties. Examples of the former include glycidyl azide polymer (GAP), the copolymer of (*bis*-azidoethyl) oxetane (BAMO) with (3-nitratomethyl-3-methyl) oxetane (NMMO), called BAMO/NMMO, other polymers or copolymers of the same type utilizing such molecules as 3-azidomethyl-3-methyl oxetane (AMMO), ~~poly(diethyleneglycol-4,8-dinitraza undecanoate)~~ poly(diethyleneglycol-4,8-dinitrazaundecanoate) (ORP-2A), bis-(nitratomethyl) oxetane (BNMO) and the like, and

polyglycidyl nitrate (Poly Glyn). Examples of the latter include polyethylene glycol (PEG), polypropylene glycol (PPG), hydroxy-terminated polycaprolactones, hydroxy-terminated polyesters, hydroxy-terminated polyethers (HTPE) and combinations of these polymers and oligomers; i.e, hydroxy-terminated polycaprolactone ether (HTCE). In a preferred embodiment of the present invention, the energetic binders selected are polycaprolactone (PCP), ORP-2A and Poly Glyn.

Please replace the paragraph in the application on [page 11, lines 6-14] with the following amended paragraph:

[page 11, lines 6-14] Suitable plasticizers include TEGDN, (triethyleneglycol dinitrate), Butyl NENA, (n-butyl-2-nitratoethyl-nitramine), DEGDN (diethyleneglycol dinitrate), TMETN (trimethylolethane trinitrate), and BTTN (butanetriol trinitrate). These plasticizers may be used independently or in combination. In other embodiments of the present invention relating to PCP/NE/ADN, PCP/NE/ADN/ADNP and PCP/NE/ADNP/CL-20, one ~~plasticizer~~ plasticizer used in the formulation is a combination of BTTN, TMETN and bu-NENA. BTTN comprises about 4.0-6.0 weight % of the formulation, or about 5.2 weight %, TMETN comprises about ~~about~~ 10-13 weight % of the formulation, or about 8.5 weight %, and bu-NENA comprises about 7.0-9.0 weight % of the formulation, or about 12.7 weight %.

Please replace the paragraph in the application on [page 14, lines 3-10] with the following amended paragraph:

[page 14, lines 3-10] In preferred embodiments of the present invention, the binder incorporated for ORP-2A/NE/AND, ORP-2A/NE/ADN/ADNP, and ORP-2A/NE/ADNP/CL-20 is ORP-2A (~~poly(diethyleneglycol-4,8-dinitrazaundecanoate)~~ poly(diethyleneglycol-4,8-dinitrazaundecanoate)). Other suitable binders include polyethylene glycol, copolymer of polyethylene glycol, polypropylene glycol and copolymer of polypropylene glycol as noted above. In a preferred embodiment of the present invention relating to ORP-2A/NE/AND, ORP-2A/NE/ADN/ADNP, and ORP-

2A/ NE/ADNP/CL-20, the polymeric binder comprises about 6.0-9.0 weight % of the formulation, preferably at about 6.8 weight %.

Please replace the paragraph in the application on [pages 14-15, lines 11-13 and 1-5] with the following amended paragraph:

[pages 14-15, lines 11-13 and 1-5] Suitable plasticizers include TEGDN, (triethyleneglycol dinitrate), Butyl NENA, (n-butyl-2-nitratoethyl-nitramine), DEGDN (diethyleneglycol dinitrate), TMETN (trimethylolethane trinitrate), and BTTN (butanetriol trinitrate). These plasticizers may be used independently or in combination. In other embodiments of the present invention relating to ORP-2A/NE/AND, ORP-2A/NE/ADN/ADNP, and ORP-2A/ NE/ADNP/CL-20, one ~~plasticizer~~ plasticizer used in the formulation is a combination of BTTN and TMETN. BTTN comprises about 5.0-12 weight % of the formulation, or about 11.8 weight %, and TMETN comprises about ~~about~~ 15-22 weight % of the formulation, or about 15.5 weight %.

Please replace the paragraph in the application on [page 18, lines 10-18] with the following amended paragraph:

[page 18, lines 10-18] Suitable plasticizers include TEGDN, (triethyleneglycol dinitrate), Butyl NENA, (n-butyl-2-nitratoethyl-nitramine), DEGDN (diethyleneglycol dinitrate), TMETN (trimethylolethane trinitrate), and BTTN (butanetriol trinitrate). These plasticizers may be used independently or in combination. In embodiments of the present invention relating to PCP/NE/ADN, PCP/NE/ADN/ADNP and PCP/NE/ADNP/CL-20, one ~~plasticizer~~ plasticizer used in the formulation is a combination of BTTN, TMETN and bu-NENA. BTTN comprises about 0-7.0 weight % of the formulation, or about 5.0 weight %, TMETN comprises about ~~about~~ 10-15 weight % of the formulation, or about 12 weight %, and bu-NENA comprises about 2.0-10 weight % of the formulation, or about 9.9 weight %.

Please replace the paragraph in the application on [pages 20-21, lines 1-2 and 1-5] with the following amended paragraph:

[pages 20-21, lines 1-2 and 1-5] Five types of propellant binders were tested. The binders tested are as follows: PCP/NE, ORP-2A/NE, PolyGlyn/TMETN/BTTN, PolyGlyn/ButylNENA/TMETN, and PolyGlyn/ButylNENA/TMETN/BTTN. Referring to Table 2, NE is nitrate ester mixtures of butanetriol trinitrate (BTTN), trimethylethane trinitrate (TMETN), and ~~n-n-butyl-N-(2-nitroxyethyl)nitramine~~ n-butyl-2-nitratoethyl-nitramine (bu-NENA); ADNP is ADN prills.